

ABSTRACT

A hybrid structure (50) and method of manufacturing the same including a structural ceramic matrix composite (CMC) material (42) coated with a layer of ceramic insulating tiles (24). Individual ceramic tiles are attached to a surface (22) of a mold (20). The exterior surface (32) of the tiles may be subjected to a mechanical process such as machining with the mold in place to provide mechanical support for the tiles. A layer of CMC material is then applied to bond the tiles and the CMC material together into a hybrid structure. The mold may include a fugitive material portion (26) to facilitate removal of the mold when the hybrid structure has a complex shape. Tiles located in different regions of the structure may have different compositions and/or dimensions. The gaps between adjacent tiles may be filled from the outside before the CMC material is applied or from the inside after the mold is removed.